IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Confirmation No · 4985

Funke et al.

Art Unit: 1616

Appl. No.: 10/578,512

§ 371 (c) Date: April 5, 2007

Examiner: Pak, John D.

For: Active Agent Combinations with

Insecticidal and Acaricidal Properties

Declaration of Heike Hungenberg under 37 C.F.R. §1.132

Commissioner for Patents PO Box 1450 Alexandria, VA 22313-1450

- I. Heike Hungenberg, of Grünewaldstr. 39b, 40764 Langenfeld, Germany, a citizen of Langenfeld, Germany, hereby declare:
- That I am a biologist having studied at the University of Giessen, Germany.
- 2. That I received my diploma degree in biology at the University of Giessen. Germany in 1992.
- 3. That I entered the employment of Bayer in 1992 and that I am presently employed by Bayer CropScience AG, the assignee of the above-captioned application.
- that I currently hold the position of a scientist within the group of Product and Project Support, in which I supervise the biological tests of insecticides; and that I have held this position for 8 years;
- 5. that I am named as an inventor in U.S. Patent Application No. 10/578,512 ("Application") which is the U.S. National Phase Application of International Application No. PCT/EP2004/012329, which has been assigned to Bayer CropScience AG

- that I have read and understand the specification and claims of the Application;
- that compounds (I-1),(I-2), Abameetin, Diafenthiuron, Spinosad, Endosulfan, and compounds of the formula (II-1), described in the Application, were tested as described in Examples A - I, below;
 - 8. that Examples A -I were carried out under my supervision and direction;
- that the expected efficacy of a given combination of two compounds is calculated as follows (see Colby, S.R., "Calculating Synergistic and antagonistic Responses of Herbicide Combinations", Weeds 15, pp. 20-22, 1967):

X is the efficacy expressed in % mortality of the untreated control for test compound A at a concentration of m ppm respectively m g/ha,
Y is the efficacy expressed in % mortality of the untreated control for test compound B at a concentration of n ppm respectively n g/ha,

 $E \ is the \ efficacy \ expressed \ in \ \% \ mortality \ of the \ untreated \ control \ using \ the \ mix-ture \ of \ A \ and \ B \ at \ m \ and \ n \ ppm \ respectively \ m \ and \ n \ g \ \ \ \ /ha,$

then is
$$E=X+Y-\frac{X\cdot Y}{100}$$

If the observed insecticidal efficacy of the combination is higher than the one calculated as "B", then the combination of the two compounds is more than additive, i.e., there is a synergistic effect.

10. Example A

Aphis gossypii - test

Solvent: 7 parts by weight of dimethylformamide

Emulsifier: 2 parts by weight of alkylaryl polyglycolether

To produce a suitable preparation of active compound, 1 part by weight of active compound is mixed with the stated amount of solvent and emulsifier, and the concentrate is diluted with emulsifier-containing water to the desired concentration.

Cotton leaves (Gossypium herbaceum) which are heavily infested by the cotton aphid (Aphis gossypii) are treated by being dipped into the preparation of the active compound of the desired concentration.

After the specified period of time, the mortality in % is determined. 100 % means that all the aphids have been killed; 0 % means that none of the aphids have been killed.

Table A1
plant damaging insects

	Aphis gossypii – tes	t	
Active Ingredient	Concentration	Efficacy	
	in ppm	in % after 1 ^d	
II-1-4			-
	4	25	
Diafenthiuron	20	15	
	4	15	
II-1-4 + Diafenthiuron (1:1) according to the invention	4+4	obs.* cal.** 50 36,25	
t she -	observed	insecticidal	efficacy

^{**} cal. = efficacy calculated with Colby-formula

Funke et al. Appl. No. 10/578,512

Example B

Heliothis armigera test

Solvent: 7 parts by weight of dimethylformamide

Emulsifier: 2 parts by weight of alkylaryl polyglycolether

To produce a suitable preparation of active compound, I part by weight of active compound is mixed with the stated amount of solvent and emulsifier, and the concentrate is diluted with emulsifier-containing water to the desired concentration.

Soybean shoots (Glycine max) are treated by being dipped into the preparation of the active compound of the desired concentration and are infested with larvae of the cotton boll worm (Heliothis armingera) as long as the leaves are still moist.

After the specified period of time, the mortality in % is determined. 100 % means that all the caterpillars have been killed; 0 % means that none of the caterpillars have been killed.

Table B1 Plant damaging insects

lant damaging insects Ieliothis armigera - Test		
Active Ingredient	Concentration	Efficacy
	in ppm	in % after 3d
II-1-4		
	0,0064	55
Spinosad		
	0,032	0
II-1-4 + Spinosad (1:5)		obs.* cal.**
according to the invention	0,0064 + 0,032	80 55
* ohe =	observed	insecticidal efficacy

^{**} cal. = efficacy calculated with Colby-formula

Example C Myzus persicae - test

Solvent: 78 parts by weight 1,5 parts by weight of dimethylformamide of acetone

Emulsifier: 0,5 parts by weight of alkylaryl polyglykolether

To produce a suitable preparation of active compound, I part by weight of active compound is mixed with the stated amount of solvent and emulsifier, and the concentrate is diluted with emulsifier-containing water to the desired concentration.

Cabbage leaves (Brassica oleracea) which are heavily infested by the green peach aphid (Myzus persicae) are treated by being sprayed with the preparation of the active compound at the desired concentration.

After the specified period of time, the mortality in % is determined. 100 % means that all the aphids have been killed; 0 % means that none of the aphids have been killed.

Table C1 Plant damaging insects

Myzus persicae - Test		
Active Ingredient	Concentration	Efficacy
	in g/ha	in % after 1d
	111111111111111111111111111111111111111	IN 79 MAREL
Y		
ŅН	4	0
NH M		
CF ₀		
The CI		
\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		1
Br		
II-1-1		
	4	30
	7	
II-1-24		
	4	0
II-1-12		
11-1-12	1.	20
	4	20
II-1-4		

	4	50
CF ₃	4	50
NH N CI		
II-1-2	4	0
CI, NH	4	0
NH N Br		
Abamectin	4	0
(I-2)	100	0
(I-1)	100	0
NH O	4+4	<u>obs</u> .* <u>cal</u> .**
CF ₅ NH N CI		
+ Abamectin (1:1) according to the invention		

\		obs.*	cal.**
NH	4+4	70	50
CF ₃ 、			
0,3			
NH N			
) /- N, CI			
(/ ,) ₁			
γ			
CF ₃			
OF3			
+			
Abamectin (1:1)			
according to the invention			
II-1-2 + Abamectin (1:1)		obs.*	cal.**
	4+4	50	0
according to the invention	4 T 4	-b- 0	cal.**
1		obs.*	
-(4+4	50	0
ЙН			
Ch. L			
0			
NH NN			
1 7" " >			
	l		
N Br			
/ 1			
\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\			
l l			
Cr ₃			
+			
Abamectin (1:1)			
according to the invention	1		
II-1-24 + (I-2) (1 : 25)		obs.*	cal.**
11-1-24 ((1-2) (1 - 23)	4+100	40	0
according to the invention	4 1 100	obs.*	cal.**
II-1-4 + (I-2) (1:25)	4400	70	50
according to the invention	4+100		
1		obs.*	cal.**
1 -	4+100	50	0
NH		1	
CI	1	1	
C \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		1	
1 11 1	1	1	
NH NH		l	
1 1 1 1 1 1 1			
	1	1	
)-N Br	1	1	
1 (/ N	1	1	
\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	1		
ļ	1	1	
CF ₃		1	
+	1	1	
(I-2) (1:25)			
according to the invention			
II-1-1 + (I-1) (1:25)		obs.*	cal.**
11-1-1 (1-1) (1:23)	1	- Control -	

according to the invention	4 + 100	70 30	
II-1-12 + (I-1) (1:25) according to the invention	4 + 100	obs.* cal.**	
II-1-2 + (I-1) (1:25)		obs.* cal.** 50 0	
* obs	= observed	insecticidal	efficacy

* obs. = observed

** cal. = efficacy calculated with Colby-formula

Table C2 Plant damaging insects

Myzus persicae - Test Active Ingredient Concentration Efficacy				
Active Ingredient	Concentration	Efficacy		
	in g/ha	in % after 6 ^d		
NH	0,8	0		
~ L				
[] · · · -				
NH N				
ĊF _b				
C CI				
Y				
Br				
II-1-52				
	0,8	10		
Q				
CI N	0,8	0		
N				
F.F.				
0				
N N F				
CI				
_				
II-1-24				
	4	0		
1I-1-4				
	0,8	0		
	1			

0,8	0
0,8	0
0,8	50
0,8	5
	50
	0
20	0
0,8 + 0,8	obs.* cal.** 70 50
	0,8 0,8 0,8 20 100 20

OCF ₃ , A	0,8 + 0,8	obs.*	<u>cal</u> .** 50
OCF3			
NH N			
) / () ()			
\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\			
ĊF ₃			
+			
Abamectin (1:1)			
according to the invention II-1-4 + Diafenthiuron (1:1)		obs.*	<u>cal</u> .**
according to the invention	0,8 + 0,8	20	5
Y	0,8 + 20	obs.*	<u>cal</u> .** 50
ŅН	0,0 + 20	"	
WH N			
of the last of the			
Ch a			
) Y			
+		ł	
(I-2) (1:25) according to the invention			
according to the invention		ahe *	cal.**
Ch A L	0,8 + 20	obs.*	50
N N			
N			
∫ ∫ FE			
0° F>-			
N-N F			
1 1			
CI			
+			
(I-2) (1:25) according to the invention			

		T	1.64	
CF ₃ NH	0,8 + 20	obs.*	<u>cal</u> .** 50	
NH N				
CF ₃				
(I-2) (1:25) according to the invention				
OCF ₃	0,8 + 20	obs.*	cal.** 50	
NH N				
CF ₃				
+ (I-2) (1:25)				
according to the invention		obs.*	cal.**	
II-1-52 + (I-1) (1:25)		100	10	
according to the invention	0,8 + 20	obs.*	cal.**	
II-1-24 + (I-1) (1:25)	1	80	0	
according to the invention	4+100		ool ##	
II-1-4 + (I-1) (1 : 125)	1	obs.*	<u>cal</u> .**	
according to the invention	0,8 + 100	ecticidal		efficacy
* obs. =		Secudidai		omodoy

^{**} cal. = efficacy calculated with Colby-formula

Example D

Phaedon cochleariae - test

Solvent: 78 parts by weight 1,5 parts by weight of dimethylformamide

of acetone

Emulsifier: 0,5 parts by weight of alkylaryl polyglykolether

To produce a suitable preparation of active compound, 1 part by weight of active compound is mixed with the stated amount of solvent and emulsifier, and the concentrate is diluted with emulsifier-containing water to the desired concentration.

Cabbage leaves (Brassica oleracea) are treated by being sprayed with the preparation of the active compound at the desired concentration and are infested with larvae of the mustard beetle (Phaedon cochleariae) as long as the leaves are still moist.

After the specified period of time, the mortality in % is determined. 100 % means that all the beetle larvae have been killed; 0 % means that none of the beetle larvae have been killed.

Table D1
plant damaging insects

Active Ingredient	Concentration	Efficacy
	in g/ha	in % after 2d
П-1-54		
	0,16	33
II-1-12		
	0,8	17
II-1-4		
	4	50
(I-2)	100	0
	20	0
	4	0
(I-1)	100	0
	20	0
	4	0
II-1-54 + (I-2) (1 : 25)		obs.* cal.**
according to the invention	0,16 + 4	100 33 obs.* cal.**
II-1-12 + (I-2) (1:25)		obs.* cal.**

according to the invention	0,8 + 20	50 17	
II-1-4 + (I-2) (1:25) according to the invention	4+100	obs.* cal.** 67 50	
II-1-54 + (I-1) (1:25) according to the invention	0,16 + 4	obs.* cal.** 100 33	
II-1-12 + (I-1) (1:25) according to the invention	0,8 + 20	obs.* cal.** 67 17	
II-1-4 + (I-1) (1:25) according to the invention	4+100	obs.* cal.** 67 50	
*obs. =	observed	insecticidal	efficacy

*obs. = observed

** cal. = efficacy calculated with Colby-formula

Table D2
plant damaging insects
Phaedon cochleariae – test

Phaedon cochleariae – test				
Active Ingredient	Concentration	Efficacy		
	in g/ha	in % after 6 ^{tl}		
II-1-52				
	0,16	33		
	0,10	33		
II-1-24				
	0,16	33		
\				
ŅН	0,16	33		
CF ₃	0,10	"		
1770				
NH N				
0. Y-W CI				
(h				
Y				
CF ₃				
(I-2)				
	4	0		
	7	0		
(I-1)				
	4	0		
II-1-52 + (I-2) (1 : 25)		obs.* cal.**		
according to the invention	0,16 + 4	50 33		
		obs.* cal.**		
МH	0,16 + 4	67 33		
CF ₃				
NH N				
0 > N CI				
(N				
Ĭ_				
ĊF ₃				
+		1		
(I-2) (1:25) according to the invention	1			
II-1-52 + (I-1) (1:25)		obs.* cal.**		
according to the invention	0,16 + 4	67 33		
II-1-24 + (I-1) (1:25)		obs.* cal.**		
according to the invention	0,16 + 4	83 33		

			obs.*	eal.**
ЙН	0	,16 + 4	83	33
CF ₃				
I YY)			
			1	
NH NH	٧_ ٧			
'				
	-N CI			
	√ ^N			
	CF ₃			
1	013			
+				
(I-1) (1:25)				
according to the in	rvention			al efficacy
toho		observed	insecticida	

*obs. = observed

** cal. = efficacy calculated with Colby-formula

secticidal efficacy

Example E

Phaedon cochleariae - test

Solvent: 7 par

7 parts by weight of dimethylformamide

Emulsifier:

2 parts by weight of alkylaryl polyglycolether

To produce a suitable preparation of active compound, 1 part by weight of active compound is mixed with the stated amount of solvent and emulsifier, and the concentrate is

diluted with emulsifier-containing water to the desired concentration.

Cabbage leaves (Brassica oleracea) are treated by being dipped in the preparation of the active compound at the desired concentration and are infested with larvae of the mustard beetle (Phaedon cochleariae) as long as the leaves are still moist.

After the specified period of time, the mortality in % is determined. 100 % means that all the beetle larvae have been killed; 0 % means that none of the beetle larvae have been killed.

Table E1
plant damaging insects

Active Ingredient	Concentration	Efficacy
	in ppm	in % after 4d
II-1-4		
	0,16	5
Diafenthiuron		
	20	0
II-1-4 + Diafenthiuron (1:		Obs.* cal.**
125)	0,16 + 20	15 5
according to the invention	absonued	insecticidal efficacy

^{**} cal. = efficacy calculated with Colby-formula

Example F

Plutella xylostella - test

Solvent: 7 parts by weight of dimethylformamide

Emulsifier: 2 parts by weight of alkylaryl polyglycolether

To produce a suitable preparation of active compound, 1 part by weight of active compound is mixed with the stated amount of solvent and emulsifier, and the concentrate is diluted with emulsifier-containing water to the desired concentration.

Cabbage leaves (Brassica oleracea) are treated by being dipped into the preparation of the active compound of the desired concentration and are infested with larvae of the diamond back moth (Phuella xylostella) as long as the leaves are still moist.

After the specified period of time, the mortality in % is determined. 100 % means that all the caterpillars have been killed; 0 % means that none of the caterpillars have been killed.

Table F1
plant damaging insects

	Plutella xylostella – test	
Active Ingredient	Concentration	Efficacy
	in ppm	in % after 6 ^d
II-1-4		
	0,0064	37,5
Abamectiu		
	0,00128	12,5
II-1-4 + Abamectin (5:1)		obs.* cal.**
according to the invention	0,0064 + 0,00128	62,5 45,32
* obs. =	observed	insecticidal efficacy

^{**} cal. = efficacy calculated with Colby-formula

Example G

Spodoptera frugiperda - test

Spodoptera rrugiperua - test
Solvent: 78 parts by weight of acetone
1,5 parts by weight of dimethylformamide

Emulsifier: 0,5 parts by weight of alkylaryl polyglykolether

To produce a suitable preparation of active compound, 1 part by weight of active compound is mixed with the stated amount of solvent and emulsifier, and the concentrate is diluted with emulsifier-containing water to the desired concentration.

Cabbage leaves (Brassica oleracea) are treated by being sprayed with the preparation of the active compound at the desired concentration and are infested with larvae of the fall army worm (Spodoptera frugiperda) as long as the leaves are still moist.

After the specified period of time, the mortality in % is determined. 100 % means that all the caterpillars have been killed; 0 % means that none of the caterpillars have been killed.

According to the present application in this test e.g. the following combinations show a synergistic effect in comparison to the single compounds:

Table G1: Spodentera fruginerda - test

Active Ingredient	Concentration	Efficacy
	<u>ln g/ha</u>	in % after 2 ^d
NH S	4	0
NH N CI		
II-1-54		
	0,16	33
H-1-1		
	0,16	33

CI N F F F CI	4	50
CF ₃ NH N CI	4	67
OCF ₃ NH NH N CF ₃ CF ₃	4	33
П-1-2	0,8 0,16	67 33

CI NH N Br	4	83
ĊF ₃		
Abamectin	4	0
	0,8	0
(I-2)	100	0
	20	0
	4	0
(I-1)	100	0
(1-1)	4	0
NH	4+4	obs.* cal.** 17 0
CF _B CI		
Br + Abamectin		
(1:1)		
according to the invention	4+4	obs.* cal.** 100 50
N N N F		
Abamectin (1:1) according to the invention		

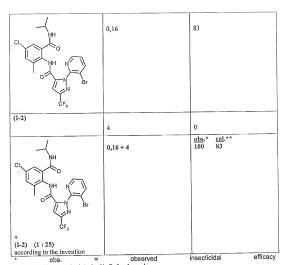
Π -1-2 + Abamectin (1:1)		obs.*	cal.**
according to the invention	0,8 + 0,8		cal.**
II-1-54 + (I-2) (1:25)	0,16 + 4	obs.*	33
according to the invention II-1-1 + (I-2) (1:25)	0,10 + 4	obs.*	cal.**
according to the invention	0,16 + 4	83	33
according to the invention	0,20	obs.*	cal.**
ŅН	4 + 100	50	33
OCF ₅ , ~ &			
NH N/			
			1
0 7 7			
l (ch			
Ý			
ĊF ₃ + (I-2)			
(1:25)			
according to the invention			.1 66
II-1-2 + (I-2) (1:25)	0.0.00	obs.*	<u>cal</u> .**
according to the invention	0,8 + 20	obs.*	
	4 + 100	17	0
йн	1		
1 ~ &.			
1170			
NH N			
0.95 N			
(), O			
Y			
Br + (I-1) (1:			
25)			
according to the invention		obs.*	cal.**
Ŷ	4+100	83	50
CK ~ L.	4 + 100	100	
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \			
Y N _			
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
0- 1-			
N N-N F		1	
N N			
CI +	.		
(I-1) (1:25)		1	
according to the invention			

NH CF _a ,	4+100	obs.* 83	<u>cal</u> .** 67	
NH N				
N CI				
CF ₃ +				
(I-1) (1:25)				
according to the invention		also 8	cal **	
II-1-2 + (I-1) (1 : 25)	0,16 + 4	obs.*	cal.**	
according to the invention	0,10 + 4	obe #	cal.**	
	4 + 100	obs.*	83	
1 7	4 1 100	100	0.0	
NH				
CI				
NH N/				
O Br				
	1			
Y"				
ĊF ₃ +				
(I-1) (1:25)				
according to the invention				
* obs. =		ecticidal		efficacy

** cal. = efficacy calculated with Colby-formula

Table G2
plant damaging insects
Spodoptera frugiperda – test

	i i	poutopiera iragiperaa sest	
Active	Ingredient	Concentration	Efficacy
		in g/ha	in % after 6 ^d



** cal. = efficacy calculated with Colby-formula

Example H

Tetranychus test (OP-resistant/dip test)

Solvent:

weight

78 parts by weight 1,5 parts by weight of dimethylformamide

of acetone

Emulsifier:

0,5 parts by weight of alkylaryl polyglykolether

Funke et al. Appl. No. 10/578,512

To produce a suitable preparation of active compound, 1 part by weight of active compound is mixed with the stated amount of solvent and emulsifier, and the concentrate is diluted with emulsifier-containing water to the desired concentration.

Bean plants (*Phaseolus vulgaris*) which are heavily infested with all stages of the twospotted spider mite (*Tetranychus urticae*) are treated by being sprayed with the preparation of the active compound at the desired concentration.

After the specified period of time, mortality in % is determined. 100 % means that all the spider mites have been killed; 0 % means that none of the spider mites have been killed. According to the present application in this test e.g. the following combination showed a synergistic effect in comparison to the single compounds:

Table H1 Plant damaging mites

Active Ingredient Concentration in g/ha Efficacy in % after 2 ^d	Tetranychus urticae (OP-resistent) - Test				
II-1-52	Active Ingredient	Concentration	Efficacy		
II-1-52 II-1-1 0,16 0 II-1-1 4 0 II-1-2 4 0 II-1-2 4 0 II-1-1 100 50 20 10 4 0 100 4 0 0 100 4 0 0 100 4 0 0 0 10		in g/ha	in % after 2 ^d		
II-1-52 II-1-1 0,16 0 II-1-1 4 0 II-1-2 4 0 II-1-2 4 0 II-1-1 100 50 20 10 4 0 100 4 0 0 100 4 0 0 100 4 0 0 0 10					
II-1-52 II-1-1 0,16 0 II-1-1 4 0 II-1-2 4 0 II-1-2 4 0 II-1-1 100 50 20 10 4 0 100 4 0 0 100 4 0 0 100 4 0 0 0 10	Y				
II-1-52	NH	4	0		
II-1-52					
II-1-52					
II-1-52	CE NH N		()		
II-1-52	N CI				
II-1-52	(N				
O,38	Br				
II-1-12 4 0 II-1-2 4 0 (I-1) 100 50 20 10 4 0 When the proof of the invention in i	II-1-52				
II-1-12		0,8	0		
III-1-12 4 0 III-1-2 4 0 (I-1) 100 50 20 10 4 0 0 0 4+100 0 0 0 0 0 0 0 0 0 10 4 0 0 0 0 0 0 0 0 0 0 0 0	II-1-1				
II-1-2		0,16	0		
III-1-2	II-1-12				
4		4	0		
(I-1) 100 50 10 0 10 0 10 0 10 0 10 0 10 0	II-1-2				
20 4 10 0 4 4+100 20 4 10 0 0 0 0 0 0 0 0 0 0 0 0		4	0		
4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	(I-1)	100	50		
4+100 obs.* cal.** NH OF NH NI (I : 25) according to the invention II - 152 + (I - 1) (I : 25) obs.* cal.**		20	10		
4+100 80 50 NH N		4	0		
4+100 80 50 NH N			obs.* cal.**		
H (1:25) according to the invention II-52 + (I-1) (1:25)	T NH	4 + 100	80 50		
+ (I-1) (1:25)					
+ (I-1) (1:25)					
+ (I-1) (I:25) according to the invention II-1-52 + (I-1) (I:25) obs.* cal.**	NH N				
+ (I-1) (I:25) according to the invention II-1-52 + (I-1) (I:25) obs.* cal.**	CF ₈				
+ (I-1) (I:25) according to the invention II-1-52 + (I-1) (I:25) obs.* cal.**	l l ci				
+ (I-1) (I:25) according to the invention II-1-52 + (I-1) (I:25) obs.* cal.**	Y Y				
(I-1) (1:25) cacording to the invention III-1-52 + (I-1) (1:25) obs.* cal.**					
II-1-52 + (I-1) (1 : 25) obs.* cal.**	(I-1) (1:25)				
	according to the invention		obs * eal **		
	according to the invention	0,8 + 20			

II-1-1 + (I-1) (1:25) according to the invention	0,16 + 4	obs.* cal.**	
II-1-12 + (I-1) (1:25) according to the invention	4+100	<u>obs</u> .* <u>cal</u> .** 99 50	
II-1-2 + (I-1) (1:25) according to the invention	4+100	obs.* cal.** 70 50	
*ohe =	observed	insecticidal	efficacy

*obs. = observed

** cal, = efficacy calculated with Colby-formula

Table H2
Plant damaging mites
Tetrapychus priege (OP-resistent) – Test

Active Ingredient	Concentration	Efficacy
	<u>in g/ha</u>	in % after 6 ^d
		*
NH	0,032	0
CF ₀ NH N		
Br		
II-1-54	0,032	0
H-1-52	0,032	0
77 1 1	0,000	
II-1-1	0,16	0

	0.000	0
0	0,032	
	0,0064	0
OI N		
Y N		
F		
N N-N F		
CI		
V 01		
II-1-24		
	0,032	0
II-1-12		
11-1-12	0,032	0
	0,032	·
II-1-4		
	4	0
1	0,032	0
йн	0,0064	0
CF ₅ ,	0,0001	
Y ~ _		
NH N		
0) N CI		
C_h		
I I		
ĊF ₃		
\		
NH	0,032	0
OCF ₃		
NH N		
) / \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		
\ \nabla n		
CF ₃		
H-1-2	0,0064	0
	0,0004	

CI NH	0,0064	0
Abamectin	0,032	80
	0,0064	20
(I-2)	100	80
	4	70
	0,8	20
(I-1)	100	80
	0,8	20
NH O CI	0,032 + 0,032	obs.* cal.** 100 80
Abamectin (1:1) according to the invention		
according to the invention CI N N F F CI T T T T T T T T T T T T T	0,0064+0,0064	obs.* cal.** 50 20

		,	
Abamectin (1:1)			
according to the invention			
\		obs.*	cal.**
NH	0,0064 + 0,0064	60	20
CF ₃	1		
3.3			
MH N/			
1 1 1 1 1 2			
) / N (CI			
(N	i		
Y			
ĊF ₃			
1+			
	1	1	
Abamectin (1:1)	1	l	
according to the invention			
	1	obs.*	cal.**
ИN	0,032 + 0,032	100	80
OCF ₃			
1 1 7 0			
1 I M. N. A			
) /- N Cı			
(in			
Y			
ĊF ₃			
+			
Abamectin (1:1)			
according to the invention			
		obs.*	cal.**
		50	20
according to the invention	0,0064 + 0,0064		
/		obs.*	<u>cal</u> .**
1 —	0,0064 + 0,0064	80	20
ήн			
		1	
1 1 7 0		1	
T NH N' N		1	
1 0 >			
) N Br			
(N		1	
Υ		l	
ĊF ₃			
+			
Abamectin (1:1)			
according to the invention		1	
according to the invention		L	

ЙН	0,032 + 0,8	obs.*	cal.** 20
CF ₃ NH N			
D. D. OI			
Br +			
(I-2) (1:25) according to the invention			
II-1-54 + (I-2) (1:25) according to the invention	0,032 + 0,8	obs.*	cal.** 20
II-1-52 + (I-2) (1:25) according to the invention	0,032 + 0,8	obs.*	cal.** 20
II-1-1 + (I-2) (1:25) according to the invention	0,16 + 4	obs.* 90 obs.*	cal.** 70 cal.**
II-1-24 + (I-2) (1:25) according to the invention	0,032 + 0,8	70 obs.*	20 cal.**
II-1-12 + (I-2) (1 : 25) according to the invention II-1-4 + (I-2) (1 : 25)	0,032 + 0,8	60 obs.*	20 cal.**
according to the invention	4+100	99 obs.*	80 cal.**
OCF ₃	0,032 + 0,8	40	20
TT.			
L'N CI			
CF ₃			
+ (I-2) (1:25) according to the invention			
II-1-54 + (I-1) (1:25) according to the invention	0,032 + 0,8	obs.*	cal.** 20

CI N F F CI	0,032 + 0,8	<u>ol</u> 70	<u>bs</u> .* 0	cal.** 20	
(I-1) (1:25) according to the invention					
II-1-24 + (I-1) (1:25) according to the invention	0,032 + 0,8	27	<u>bs</u> .*	cal.** 20	
II-1-4 + (I-1) (1:25)			bs.*	cal.**	
according to the invention	4+100			80	efficacy
*obs. = ** cal. = efficacy calculated with	observed Colby-formula	insectici	uai		emoacy

Example I

Tetranychus test (OP-resistant/dip test)

Solvent: 7 parts by weight of dimethylformamide

Emulsifier: 2 parts by weight of alkylaryl polyglycolether

To produce a suitable preparation of active compound, 1 part by weight of active compound is mixed with the stated amount of solvent and emulsifier, and the concentrate is diluted with emulsifier-containing water to the desired concentration.

Bean plants (*Phaseolus vulgaris*) which are heavily infested with all stages of the twospotted spider mite (*Tetranychus urticae*) are treated by being dipped in the preparation of the active compound at the desired concentration.

After the specified period of time, mortality in % is determined. 100 % means that all the spider mites have been killed; 0 % means that none of the spider mites have been killed. According to the present application in this test e.g. the following combinations show a synergistic effect in comparison to the single compounds:

Table I1
Plant damaging mites
Tetranychus urticae (OP-resistent) – Test

Active Ingredient	Concentration	Efficacy	
	in ppm	in % after 7d	
II-1-9			
	100	0	
(I-2)			
	0,8	0	
(I-1)			
	0,8	65	
II-1-9 + (I-2) (125:1)	100 1 0 0	obs,* cal,**	
according to the invention	100 + 0,8	obs.* cal.**	
II-1-9 +(I-1) (125 : 1) according to the invention	100 + 0,8	95 65	efficacy

*obs. = observed

** cal. = efficacy calculated with Colby-formula

The undersigned declares further that all statements made herein of his/her own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Signed at Monheim, Germany,

1. 17. 2010 Date

Keike Hyg